

Appendix E | Data

Accurate information about who is bicycling today, where they are traveling and for what purposes can help MTC and other public and advocacy organizations develop appropriate bicycle facilities and target marketing to potential new cyclists. This appendix describes the data sources used in this plan and concludes with recommendations for improving each.

Bay Area Travel Survey

Every 10 to 15 years, MTC asks thousands of randomly selected Bay Area households to track their travel patterns for a few days in an “activity diary.” All members of participating households document each time they move from one place to another, recording the origin, destination, time and mode in these diaries. Children’s activities

are recorded by adults in the same household. The data collected from these trip diaries are then “expanded” – a statistical term meaning that the travel patterns of each household are multiplied by the number of Bay Area households with a similar demographic make-up – to represent the travel characteristics of all households in the region. The expanded data is then published as the Bay Area Travel Survey (BATS), the region’s only source of data on trip purposes⁷. Each trip recorded (e.g., a commuter’s bike ride to

⁷ BATS data is now expanded using demographic data from the U.S. Census American Community Survey (ACS). See page 120 for more information on ACS.

work) is assumed to represent between 250 and 1,000 actual trips, depending on the demographics of the trip-maker. Therefore, data is more statistically precise in the more populous counties.

In addition to trips that occur by one mode only, BATS collects data on multi-modal trips, including those that use a bicycle to access public transit. In the past, MTC has analyzed this data and found that the number of bike-to-transit trips is too small regionwide to provide meaningful information. Transit operators’ onboard surveys are a much better vehicle with which to collect this information. A more complete picture of bicycle usage could be obtained by adding bicycle trips reported by

BATS to bike-access-to-transit trips reported by Bay Area transit operators.

U.S. Census Journey-to-Work

Historically, the U.S. Census Bureau's detailed decennial survey of one in eight U.S. households has provided bicycle commuter levels through the Journey-to-Work (JTW) dataset. Transportation planners have relied on the JTW because of its extremely large sample size – 300,000 Bay Area households were surveyed in 2000 – and because it provides information about one of the most common bicycle trip purposes. In contrast to BATS, which provides information about *bicycle trips*, the focus of the JTW is on the number and characteristics of *bicyclists* (who bicycle to work).

Because of how the JTW question is worded (“How did this person usually get to work last week?”) and the limitation of being able to report just one mode (“If this person usually used more than one method of transportation during the trip, mark the box of the mode used for the most distance”), the survey may miss reporting occasional

bicycle commuters and those who bicycle to public transit.

After the 2000 Census, the Census Bureau discontinued the one-in-eight household “long form,” the source of the JTW dataset. However, JTW data is now available through the American Community Survey (see following section).

U.S. Census American Community Survey

The American Community Survey (ACS) is an ongoing survey administered by the U.S. Census Bureau that provides annual data for large geographic areas (65,000+ total population), data every three years for smaller (20,000+ total population) and larger areas, and five-year data for all geographic areas down to the census tract and block group. ACS now contains the journey-to-work question that was previously asked in the “long form.” Having access to data more frequently than once in ten years will allow planners and analysts to better understand trends in the demographics of bicycle commuters over time.

Although ACS is administered much more frequently than the decennial Census, many fewer households are being surveyed than completed the Census “long form.” This means that, although updated ACS data is available to all areas more frequently than the decennial Census, the data has larger standard errors. Also, because data is collected between US censuses when population numbers are not known, and state and federal demographers do not agree on population in intermediate years, additional errors may occur in the expanding and weighting process common to all sample surveys (see BATS section on page 119).

Future work

Until the number of Bay Area bicycle trips grows significantly relative to those made by automobile, the Bay Area Travel Survey will be an imperfect tool to measure cycling in the region. In 2000, MTC spent \$1.5 million surveying 15,000 BATS households. These numbers would need to double in order to increase the precision of the resulting bicycle trip data.

The Bay Area Travel Survey should continue to collect information on bicycle ownership and usage and detailed multi-modal journeys that use bicycles as an access or egress mode. MTC should also consider having future BATS travel diaries record bicycle use over a longer period of time, say over the past week or month. The survey could utilize global positioning systems (GPS) devices to track routes for pedestrians, cyclists and vehicles over the course of the survey period to accurately monitor speed and distance traveled.

Changes to the American Community Survey are not likely unless required by Congress. However, the Census Bureau could consider pretesting an “all modes used in the journey to work” question to replace the current question, which asks about the “mode used for greatest distance.” In addition, MTC staff should carefully review any upcoming Census products for bicycle commuting information and/or analysis generated from ACS data. Finally, MTC staff should use and encourage the use

of ACS county-level data⁸ to investigate characteristics of bicycle commuters over time.

⁸ ACS Public Use Microdata Sample (PUMS) reports Bay Area data in 54 PUMAs (public use microdata sample areas).

